

Instrumentation for Low-Frequency Vibration in a Synchrotron Facility

D. J. Wang, S.Y. Perng, H.C. Ho, C. K. Kuan

Synchrotron Radiation Research Center

No.1 R&D Road VI, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.

Phone: 886-3-5780281 ext. 6306; Fax: 886-3-5783890

E-mail: djwang@srrc.gov.tw

Abstract

Many commercial accelerometers and tilting sensors for monitoring the vibration at low amplitude (submicron order) and low frequency (below 1 Hz) were compared. A piezoelectric-driven shaker in the submicron to micron range was used to calibrate the instruments. A new design of a low-frequency accelerometer is presented. The accelerometer includes a constant force device, a high-sensitivity displacement sensor, and an appropriate mechanism. Some applications in the beamline and storage ring are also presented.

Keywords: low frequency vibration

Presentation: Poster